



(X = ENGAGED CLUTCH)

FIG. 1b

RATIO SPREAD	10.58
RATIO STEPS	
REV/1	-0.48
1/2	1.95
2/3	1.94
3/4	1.41
4/5	1.32
5/6	1.12
6/7	1.21
7/8	1.10

2/12

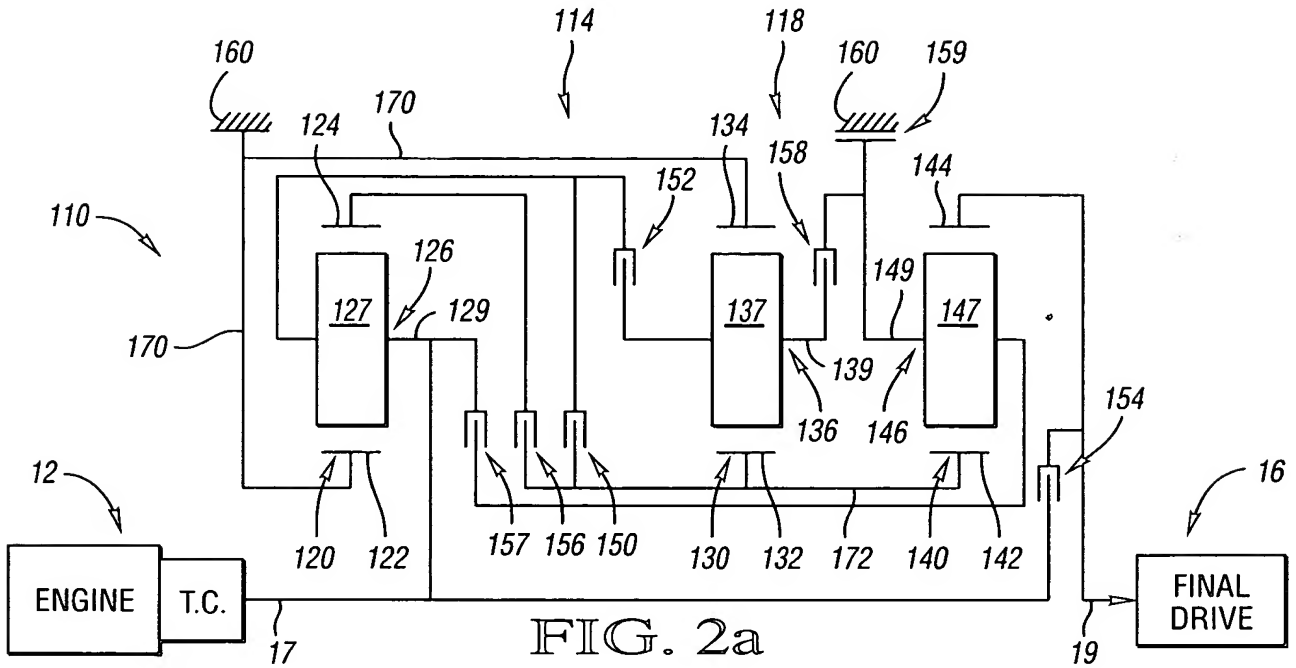


FIG. 2a

FIG. 2b

	RATIOS	150	152	154	156	157	158	159
REVERSE 3	-2.63	X						X
REVERSE 2	-1.58				X			X
REVERSE 1	-1.03		X					X
NEUTRAL	0.00	X						
1	5.89	X					X	
2	3.54				X		X	
3	2.35		X				X	
4	1.41					X	X	
5	1.00			X		X		
6	0.75		X			X		
7	0.60				X	X		
8	0.52	X				X		

(X = ENGAGED CLUTCH)

$\frac{\text{RING GEAR}}{\text{SUN GEAR}}$  TOOTH RATIO:  $\frac{N_{R1}}{N_{S1}} = 1.51$ ,  $\frac{N_{R2}}{N_{S2}} = 1.51$ ,  $\frac{N_{R3}}{N_{S3}} = 2.63$

RATIO SPREAD	11.27
RATIO STEPS	
REV3/1	-0.45
1/2	1.66
2/3	1.51
3/4	1.66
4/5	1.41
5/6	1.34
6/7	1.24
7/8	1.15

3/12

FIG. 3a

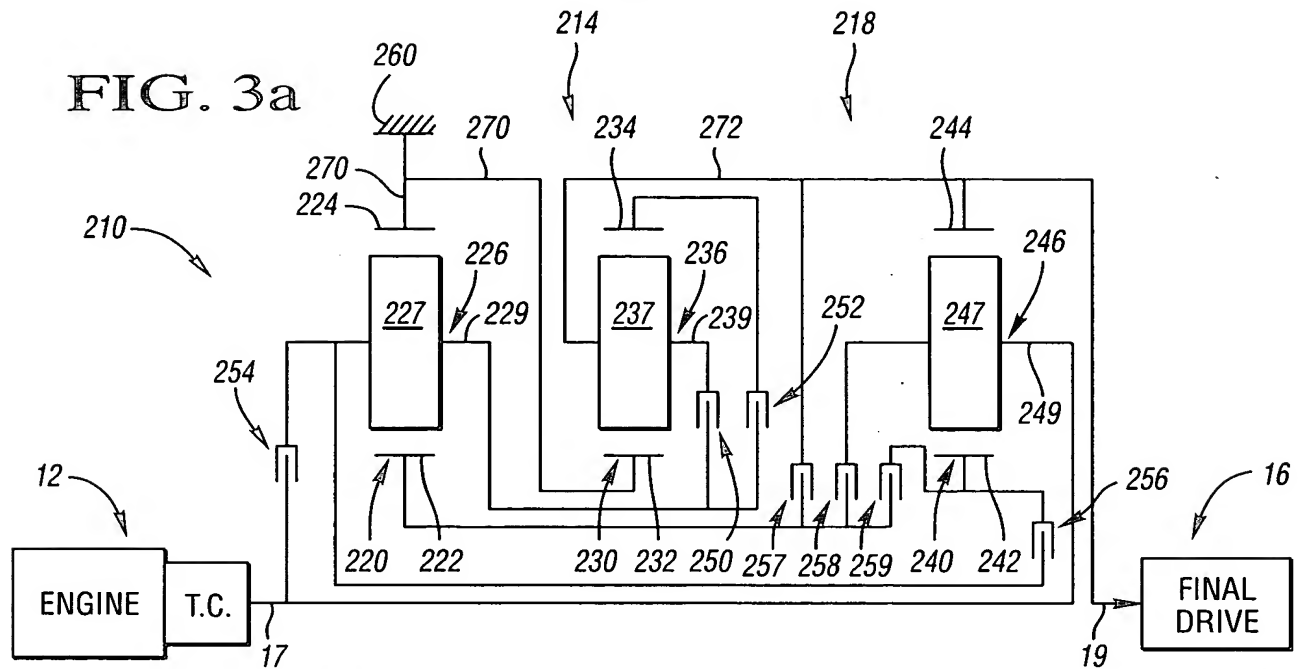


FIG. 3b

	RATIOS	250	252	254	256	257	258	259
REVERSE	-4.75			X				X
NEUTRAL	0.00						X	
1	5.69		X				X	
1'	3.42	X					X	
2	2.56		X					X
2'	1.81	X						X
3	1.66		X	X				
4	1.22		X		X			
5	1.00			X	X			
6	0.76				X	X		
7	0.74				X		X	
8	0.67				X			X
8'	0.29			X		X		

(X = ENGAGED CLUTCH)

RING GEAR TOOTH RATIO:  $\frac{N_{R1}}{N_{S1}} = 2.42$ ,  $\frac{N_{R2}}{N_{S2}} = 1.51$ ,  $\frac{N_{R3}}{N_{S3}} = 2.00$

RATIO SPREAD	8.54
RATIO STEPS	
REV/1	-0.83
1/2	2.22
2/3	1.54
3/4	1.36
4/5	1.22
5/6	1.31
6/7	1.03
7/8	1.11

FIG. 4a

FIG. 4b

	RATIOS	350	352	354	356	357	358	359
REVERSE	-4.99	X					X	
NEUTRAL	0.00		X					
1	3.93		X			X		
2	2.77		X		X			
3	1.51		X				X	
4	1.00	X	X					
5	0.70		X	X				
6	0.59	X		X				
7	0.48			X	X			
8	0.43			X				X

(X = ENGAGED CLUTCH)

$$\frac{\text{RING GEAR}}{\text{SUN GEAR}} \text{ TOOTH RATIO: } \frac{N_{R1}}{N_{S1}} = 2.92, \frac{N_{R2}}{N_{S2}} = 2.39, \frac{N_{R3}}{N_{S3}} = 1.55$$

RATIO SPREAD	8.52
RATIO STEPS	
REV/1	-1.27
1/2	1.42
2/3	1.83
3/4	1.51
4/5	1.42
5/6	1.19
6/7	1.24
7/8	1.12

5/12

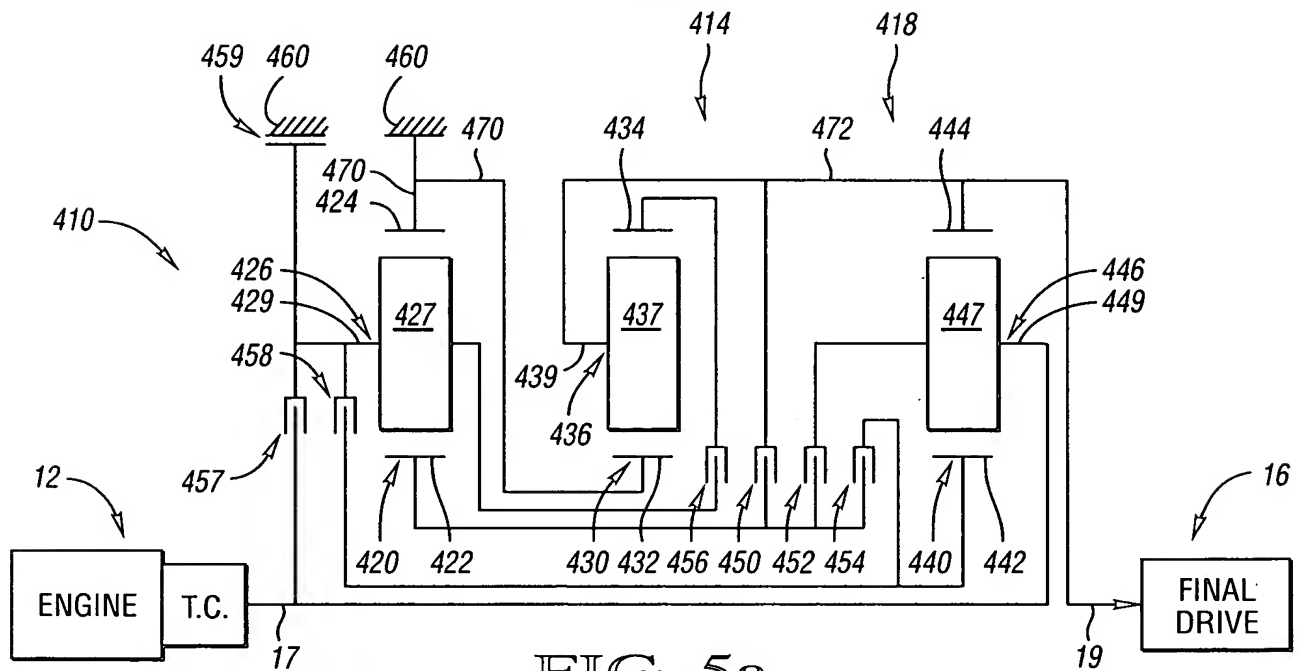


FIG. 5a

FIG. 5b

	RATIOS	450	452	454	456	457	458	459
REVERSE	-3.97			X		X		
NEUTRAL	0.00				X			
1	4.78		X		X			
2	2.51			X	X			
3	1.66				X	X		
4	1.26				X		X	
5	1.00					X	X	
6	0.74	X					X	
7	0.70		X				X	
8	0.60						X	X
8'	0.35	X				X		

(X = ENGAGED CLUTCH)

TOOTH RATIO:  $\frac{N_{R1}}{N_{S1}} = 1.88$ ,  $\frac{N_{R2}}{N_{S2}} = 1.51$ ,  $\frac{N_{R3}}{N_{S3}} = 1.50$

RATIO SPREAD	7.98
RATIO STEPS	
REV/1	-0.83
1/2	1.90
2/3	1.51
3/4	1.31
4/5	1.26
5/6	1.35
6/7	1.06
7/8	1.16

6/12

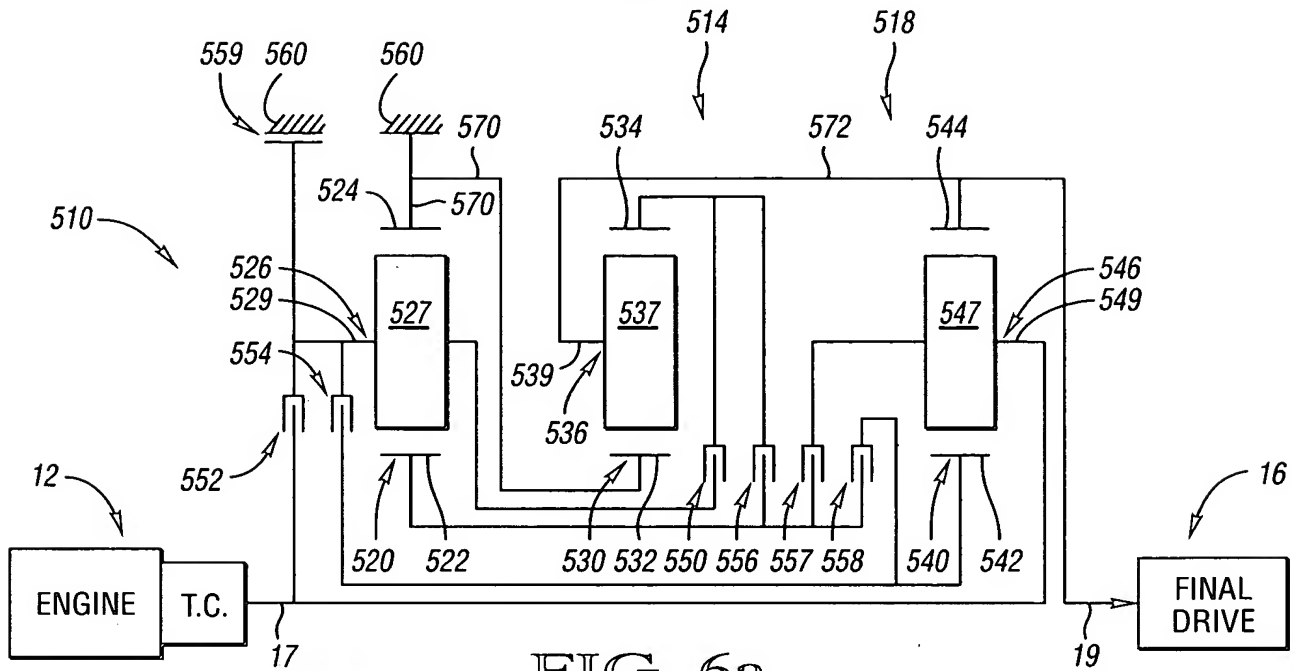


FIG. 6a

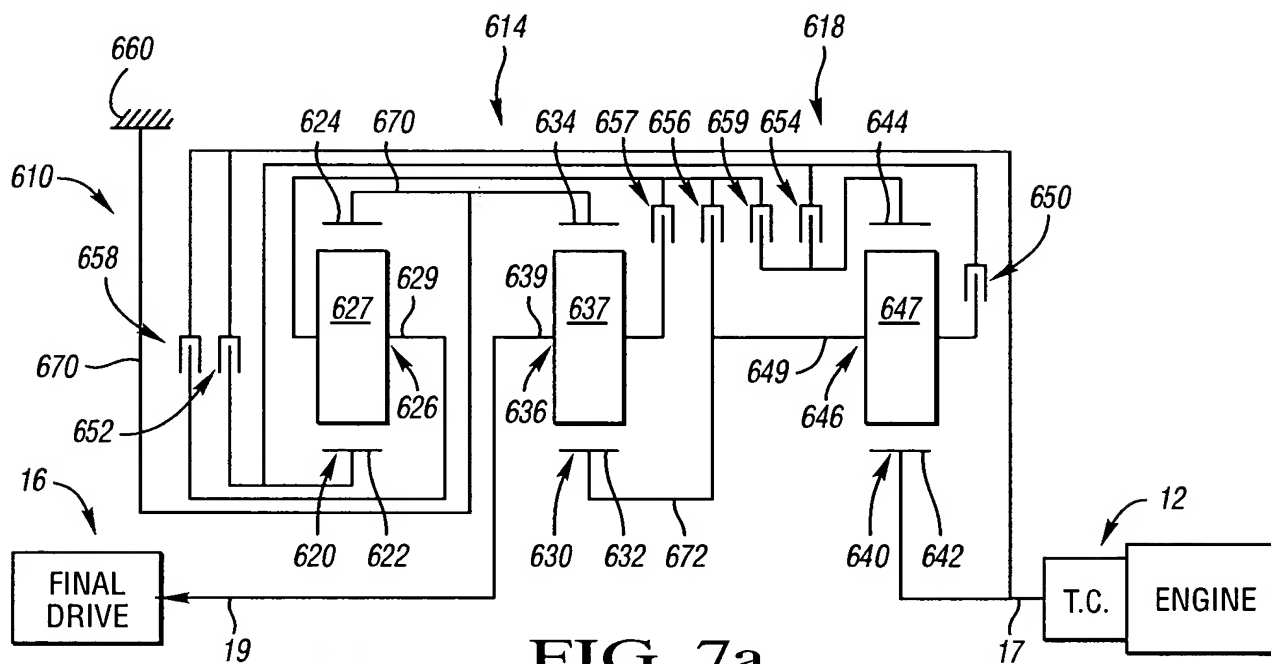
FIG. 6b

	RATIOS	550	552	554	556	557	558	559
REVERSE	-4.75		X				X	
NEUTRAL	0.00	X						
1	5.69	X				X		
2	2.56	X					X	
3	1.66	X	X					
4	1.22	X		X				
5	1.00		X	X				
6	0.83			X	X			
7	0.74			X		X		
8	0.67			X				X
8'	0.49		X		X			

(X = ENGAGED CLUTCH)

TOOTH RATIO:  $\frac{N_{R1}}{N_{S1}} = 2.42$ ,  $\frac{N_{R2}}{N_{S2}} = 1.51$ ,  $\frac{N_{R3}}{N_{S3}} = 2.00$

RATIO SPREAD	8.54
RATIO STEPS	
REV/1	-0.83
1/2	2.22
2/3	1.54
3/4	1.36
4/5	1.22
5/6	1.21
6/7	1.12
7/8	1.11

FIG. 7b

	RATIOS	650	652	654	656	657	658	659
REVERSE	-11.20			X	X			
NEUTRAL	0.00			X				
1	9.82			X				X
2	7.28	X						X
2'	7.21		X		X			
3	6.90					X		X
4	4.88		X					X
4'	2.88		X			X		
5	2.51			X				X
6	1.43			X		X		
7	1.00					X	X	
8	0.87	X					X	

(X = ENGAGED CLUTCH)

$$\frac{\text{RING GEAR}}{\text{SUN GEAR}} \text{ TOOTH RATIO: } \frac{N_{R1}}{N_{S1}} = 1.88, \frac{N_{R2}}{N_{S2}} = 1.51, \frac{N_{R3}}{N_{S3}} = 2.91$$

RATIO SPREAD	11.29
RATIO STEPS	
REV/1	-1.14
1/2	1.35
2/3	1.06
3/4	1.41
4/5	1.94
5/6	1.76
6/7	1.43
7/8	1.15

8/12

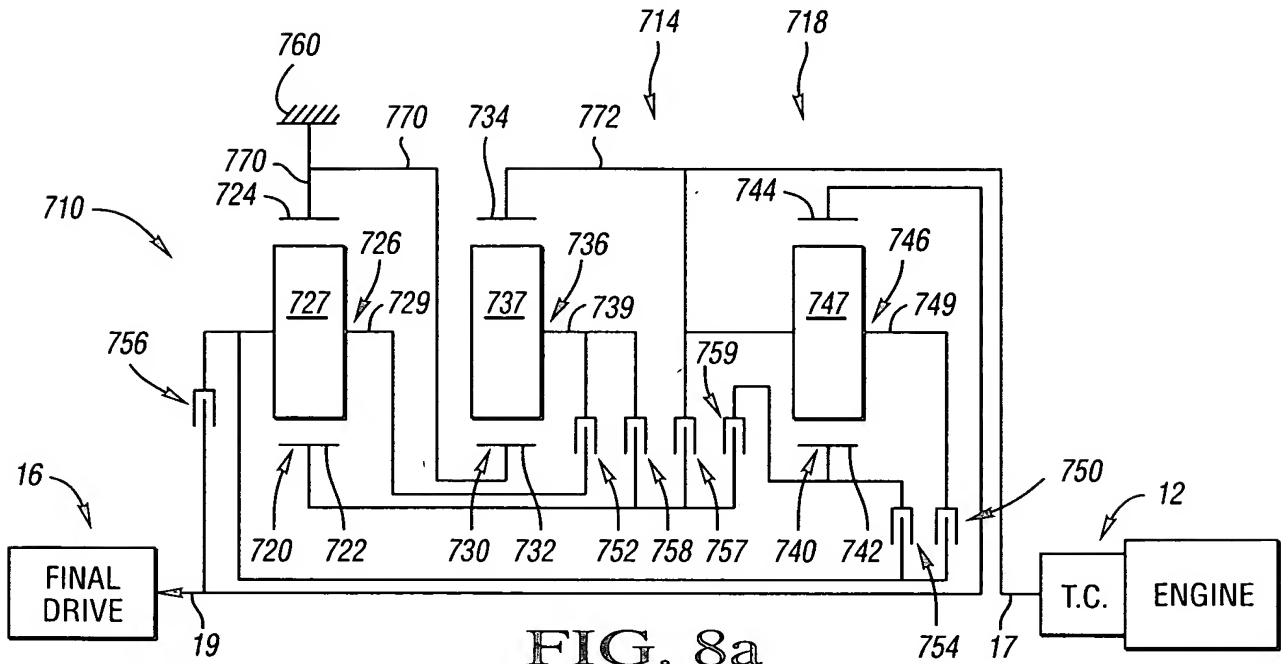


FIG. 8a

FIG. 8b

	RATIOS	750	752	754	756	757	758	759
REVERSE	-4.68	X						X
NEUTRAL	0.00				X			
1	5.57				X		X	
2	3.93				X	X		
2'	3.75		X					X
3	1.86				X			X
4	1.42		X		X			
5	1.00			X	X			
6	0.89		X	X				
7	0.76			X		X		
8	0.71			X				X

(X = ENGAGED CLUTCH)

TOOTH RATIO:  $\frac{N_{R1}}{N_{S1}} = 2.92$ ,  $\frac{N_{R2}}{N_{S2}} = 2.39$ ,  $\frac{N_{R3}}{N_{S3}} = 2.41$

RATIO SPREAD	7.47
RATIO STEPS	
REV/1	-0.84
1/2	1.42
2/3	2.14
3/4	1.31
4/5	1.42
5/6	1.12
6/7	1.16
7/8	1.09



FIG. 9a

	RATIOS	850	852	854	856	857	858	859
REVERSE	-3.30	X						X
NEUTRAL	0.00				X			
1	3.93				X		X	
2	2.77				X	X		
2'	2.64		X					X
3	1.31				X			X
4	1.00		X		X			
5	0.70			X	X			
6	0.63		X	X				
7	0.54			X		X		
8	0.50			X				X

(X = ENGAGED CLUTCH)

$$\frac{\text{RING GEAR}}{\text{SUN GEAR}} \text{ TOOTH RATIO: } \frac{N_{R1}}{N_{S1}} = 2.92, \frac{N_{R2}}{N_{S2}} = 2.39, \frac{N_{R3}}{N_{S3}} = 2.41$$

RATIO SPREAD	7.86
RATIO STEPS	
REV/1	-0.84
1/2	1.42
2/3	2.11
3/4	1.31
4/5	1.43
5/6	1.11
6/7	1.17
7/8	1.08

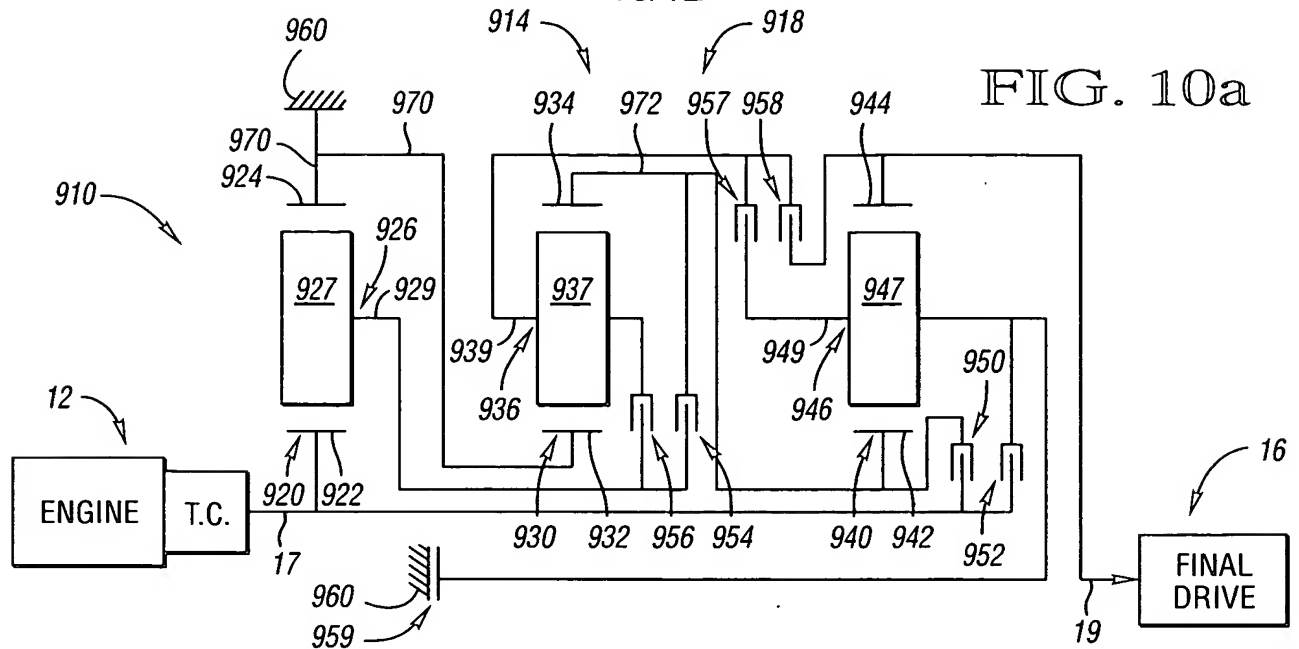


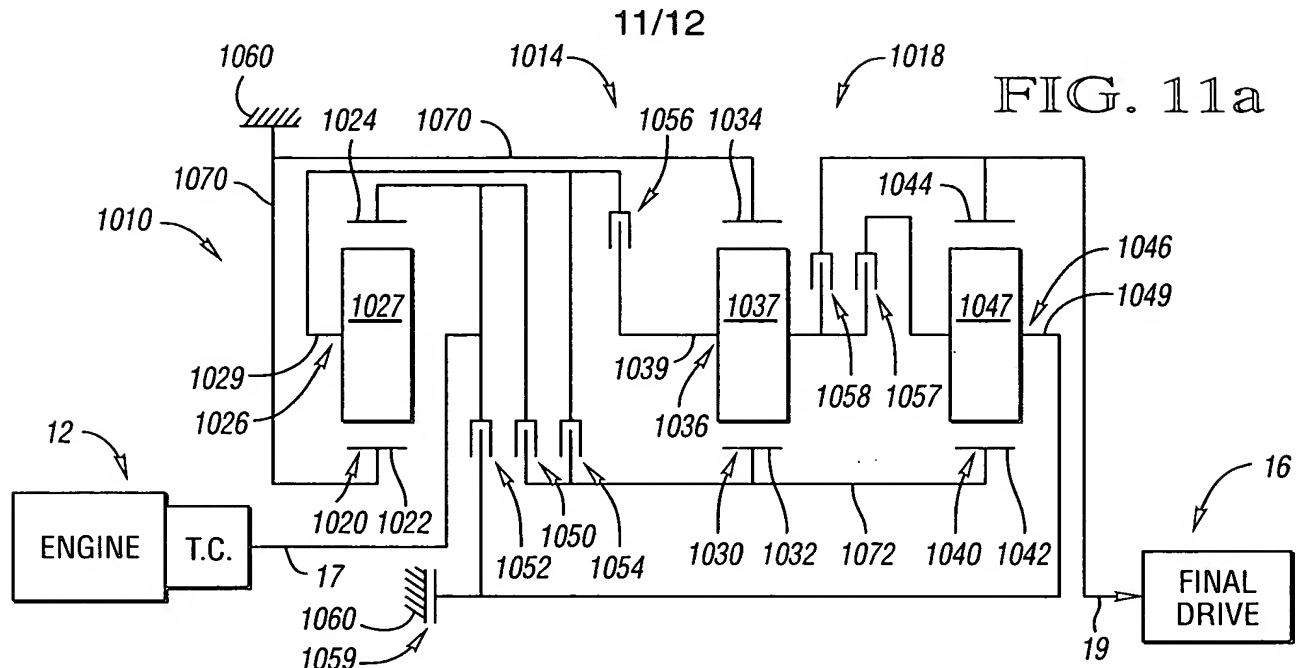
FIG. 10b

	RATIOS	950	952	954	956	957	958	959
REVERSE 3	-3.76			X				X
REVERSE 2	-2.65				X			X
REVERSE 1	-1.50	X						X
NEUTRAL	0.00			X				
1	4.92			X		X		
2	3.55			X			X	
3	2.50				X		X	
3'	1.97	X				X		
4	1.42	X					X	
4'	1.39		X			X		
5	1.17		X				X	
6	1.00	X	X					
7	0.78		X		X			
8	0.71		X	X				

(X = ENGAGED CLUTCH)

$$\frac{\text{RING GEAR}}{\text{SUN GEAR}} \text{ TOOTH RATIO: } \frac{N_{R1}}{N_{S1}} = 1.50, \frac{N_{R2}}{N_{S2}} = 2.39, \frac{N_{R3}}{N_{S3}} = 1.50$$

RATIO SPREAD	6.88
RATIO STEPS	
REV/1	-0.54
1/2	1.42
2/3	1.76
3/4	1.39
4/5	1.22
5/6	1.17
6/7	1.29
7/8	1.09



	RATIOS	1050	1052	1054	1056	1057	1058	10510
REVERSE 3	-4.16			X				X
REVERSE 2	-2.63	X						X
REVERSE 1	-1.66				X			X
NEUTRAL	0.00					X		
1	9.33			X		X		
2	5.89	X				X		
3'	3.97			X			X	
3	3.72				X	X		
4'	2.51	X					X	
4	2.35		X			X		
5'	1.58				X		X	
5	1.42		X				X	
6	1.29		X		X			
7	1.00	X	X					
8	0.88		X	X				

(X = ENGAGED CLUTCH)

$$\frac{\text{RING GEAR}}{\text{SUN GEAR}} \text{ TOOTH RATIO: } \frac{N_{R1}}{N_{S1}} = 1.71, \frac{N_{R2}}{N_{S2}} = 1.51, \frac{N_{R3}}{N_{S3}} = 2.63$$

RATIO SPREAD	10.63
RATIO STEPS	
REV3/1	-0.45
1/2	1.58
2/3	1.58
3/4	1.58
4/5	1.66
5/6	1.10
6/7	1.28
7/8	1.14

FIG. 12a

FIG. 12a

	RATIOS	1150	1152	1154	1156	1157	1158	1159
REVERSE	-3.97			X		X		
NEUTRAL	0.00				X			
1	4.78		X		X			
2	2.51			X	X			
3	1.66				X	X		
4	1.26				X		X	
5	1.00						X	X
6	0.74	X					X	
7	0.70		X				X	
8	0.60			X			X	
8'	0.35	X				X		

(X = ENGAGED CLUTCH)

$$\frac{\text{RING GEAR}}{\text{SUN GEAR}} \text{ TOOTH RATIO: } \frac{N_{R1}}{N_{S1}} = 1.88, \frac{N_{R2}}{N_{S2}} = 2.51, \frac{N_{R3}}{N_{S3}} = 1.50$$

RATIO SPREAD	7.98
RATIO STEPS	
REV/1	-0.82
1/2	1.90
2/3	1.51
3/4	1.31
4/5	1.26
5/6	1.35
6/7	1.06
7/8	1.16

FIG. 12b